5.0 MITIGATION COMMITMENTS

This section describes the proposed mitigation measures, commitments made to resource and other agencies with permitting authority and other environmental and design commitments made on behalf of the SR-212/Telegraph Street project.

5.1 Land Use

The project is consistent with, and will be designed to implement, the goals and policies of the Washington City General Plan for redevelopment of the Historic Downtown.

Under all Build alternatives there will be no prudent way to avoid acquiring project ROW from properties along Telegraph Street. These lands are needed so that the entire length of the roadway can be expanded to the specified design width. All Build alternatives were designed to minimize the amount of land to be acquired and thus minimize the conversion of land uses in the Historic Downtown.

5.2 Social

5.2.1 Community Character and Community Cohesion

UDOT believes in creating Context Sensitive Solutions for road designs and for communities. According to the General Plan, the City would like to create a pedestrian-oriented downtown that could bring new business and community cohesion to Washington City. The road designs will be developed to meet these objectives by widening the road and creating safer pedestrian facilities along Telegraph Street.

Other potential mitigation measures include:

- Improve pedestrian circulation and preserve aesthetics within the neighborhood
- Enhance the cohesiveness of surrounding routes in the community

5.2.2 Relocations

The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and relocation resources will be available to all relocates without discrimination.

5.2.3 Public Facilities, Services and Utilities

During construction and maintenance of the facility, UDOT will coordinate with public entities to minimize disruptions, delays, and negative effects on emergency response time. Coordination will involve school districts, police and fire departments, water and sewer districts, telephone and cable companies, and other public service providers that may be affected by the action.

Public notification of temporary road closures or service disruptions through signing and direct mail will also be implemented.

Improved pedestrian accommodations will include:

- Tree planting strips to separate sidewalks from the roadway for added safety and comfort of pedestrians
- Medians to separate traffic and eliminate left turns at several unsignalized intersections, improving safety for pedestrian crossings
- Crossing improvements at unsignalized intersections, including pavement markings, traffic control (demand signals, flags, etc.), and a median that could provide pedestrian refuge

5.2.4 Recreation

For all of the Build alternatives, the public will be adequately notified of any impacts to recreational facilities. Measures will be taken to minimize the noise or temporary access closures due to construction activities. The public will be notified of any temporary closures of park accesses due to construction activities.

5.3 Economic

Property acquisition will be obtained according to Federal guidelines and UDOT policies that include fair compensation measures for property owners. UDOT will comply with Title VI of the Civil Rights Act of 1964 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. In some circumstances, property owners may request an advance purchase if it can be shown that the owner will suffer a hardship if the land purchase is delayed until after the project has been formally approved.

As a safety measure, barrier-type medians are planned in certain locations to reduce accidents resulting from left turns and U-turns at intersections and from conflicting mid-block left turns. Median placement will be coordinated with the local planning and engineering departments to determine appropriate access points so as not to inhibit future development and to reduce impacts to existing businesses and residences.

Access to businesses along Telegraph Street will remain open during construction of any of the Build alternatives.

5.4 Pedestrians and Bicycles

Washington City is preparing a Trails Master Plan that will include bike and pedestrian routes. Although the plan currently does not include any routes on Telegraph Street, the City is planning bike routes that will use other, safer routes for travel. In the future, as other east-west travel routes are created, the City may choose to revisit the traffic design of Telegraph Street and introduce bicycle facilities. In the meantime, 100 North and 100 South are lower volume streets that provide an alternative route for bicycles.

In addition, crosswalks will be painted and raised medians at various locations along the corridor will provide a haven to those crossing the roadway.

5.5 Air Quality

The following Best Management Practices will be used during construction:

- Wetting stockpiles as needed to decrease fugitive dust
- Possibly using chemical dust suppressants
- Minimizing the amount of disturbed surface
- Avoiding construction on windy days
- Using street sweepers and water spray
- Ensuring all construction equipment is in proper working order
- Ensuring construction zones are closed to the general public

5.6 Noise

The UDOT Noise Abatement Policy (UDOT, 2006) states that noise abatement will only be considered if the proposed noise barrier would achieve a minimum 5 dBA noise reduction for a majority of front-row receivers under future conditions, and the cost would not exceed $25,000 per benefited receiver. Safety and maintenance issues must be

considered for a feasible design of a noise barrier. In addition, noise abatement will only be considered if the combination of 75 percent of the impacted front row receivers and 67 percent overall (including front row receivers) of the impacted residents who receive a minimum of 5 dBA reduction vote, through balloting, in favor of the abatement. Balloting of affected residents will be conducted prior to the final environmental document approval.

According to AASHTO standards, in order for a vehicle to safely turn right from a stop condition for any alternative, they need 385 feet of unobstructed view. The placement of a noise barrier at any of the three locations listed in Section 3.7.4 will prevent this. Therefore, noise barriers are considered not feasible.

5.7 Geology, Soils, and Topography

Mitigation measures will include the following:

- Develop Best Management Practices for erosion control, salinity management, and groundwater protection.
- Strengthening the existing slopes along Mill Creek.
- Reinforce new or improved outfalls to Mill Creek.

5.8 Floodplains

Mitigation measures will include;

- Collecting and treating runoff from an action prior to its discharge into the floodplain.
- Improving habitat values and functions through management and rehabilitation of any plant communities disturbed during construction.
- Providing additional design features such as steeper side slopes, guardrails and wingwalls to prevent erosion into the floodplain.

5.9 Water Quality

Short-term impacts will be mitigated by Best Management Practices (BMPs) that will be identified specifically in the stormwater pollution prevention plan (SWPPP) of the General Construction Plan. BMPs during construction will include silt fencing of the project site and temporary stormwater detention. It may also include other erosion control measures such as hydraulic control structures and vehicle wash down areas. At the completion of construction, reseeding for the restoration of disturbed area will be implemented.

If the project area stormwater is discharged to the Washington City stormwater facilities, long-term water quality mitigation measures will be incorporated into the City's plan for

stormwater quality maintenance under the City's existing UPDES permit (Permit number UTR090012). However, if the project's stormwater collection facilities are independent of the City's system, designs will need to incorporate detention facilities to minimize discharges of sediment, oils and spills to Mill Creek. These facilities could include sediment sumps with baffeled outlets. Once the project is completed, it will be transferred to Washington City and the City will need to incorporate the project's stormwater facilities into its UPDES permit.

Because the bridge over Mill Creek is at the lowest elevation in the project, stormwater from the bridge will discharge directly to Mill Creek without detention. Catch basins on the bridge will incorporate limited sediment trapping and oil-water separation.

Mitigation measures during construction will include:

- Preparation of a SWPPP.
- Construction of sediment pits.
- Re-seeding of disturbed areas.
- Coordination with the Washington City based on information in the Washington City Stormwater Master Plan.

Mitigation measure following construction will include:

- Sumps with elevated outlets to trap sediment, roadway spills oils and grease.
- Bridge catch basins with limited sediment traps and oil-water separation.

5.10 Wetlands

All impacted wetlands will be mitigated in accordance with current UDOT, FHWA and Corps wetland mitigation policy and the conditions of the §404 Nationwide Permit. All mitigation plans will be developed in coordination with the Corps and other appropriate agencies during the §404 permitting process.

The wetlands impacted by any of the Build alternatives will likely be mitigated on-site at Mill Creek. Compensatory mitigation will include the enhancement of wetland functions along Mill Creek by implementing one or more of the following (as approved by the Corps, FHWA, UDOT, and other agencies):

- Planting native trees and shrubs
- Performing non-native species control/removal
- Restoring small wetland and/or riparian areas previously impacted
- Remove litter, broken concrete, car tires, etc. from Mill Creek

In addition to compensatory mitigation, the following mitigation measures will be employed to minimize adverse impacts to wetlands during project construction:

- Unnecessary temporary impacts will be avoided by fencing the limits of disturbance through wetland areas prior to construction.
- Best Management Practices (BMPs) will be used during all phases of construction to reduce impacts from sedimentation and erosion, including the use of berms, brush barriers, check dams, erosion control blankets, filter strips, sandbag barriers, sediment basins, silt fences, straw-bale barriers, surface roughening, and/or diversion channels.
- No equipment staging or storage of construction materials will occur within 50 feet of wetlands or other water features.
- The use of chemicals, such as soil stabilizers, dust inhibitors, and fertilizers within 50 feet of wetlands and other water features will be prohibited.
- Equipment will be refueled in designated contained areas, at least 50 feet away from wetlands and other water features.
- Where practicable, work will be performed during low flows or dry periods and if flowing water is present it would be diverted around active construction areas.
- Any wetland areas used for construction access will be covered with a layer of geotextile, straw and soil prior to use.
- Any new or modified bridge over Mill Creek would be designed to prevent any direct discharge of stormwater runoff into the creek.
- All temporarily impacted wetlands will be restored to their preconstruction conditions.

5.11 Water Bodies

In order to minimize adverse impacts to other water features during project construction, the mitigation measures listed for wetlands will be implemented (see Section 5.10 Wetlands).

5.12 Wildlife

The following mitigation measures will be implemented to minimize impacts to wildlife:

- A revegetation plan will be developed for areas that would be temporarily disturbed during construction. The plan will address selection of appropriate plant species, soil preparation, seeding rates, and seeding methods. The revegetation plan will be reviewed by the UDOT Landscape Architect and UDWR.
- All areas temporarily disturbed during construction will be seeded or planted with native grasses, forbs, shrubs, and trees per the revegetation plan. Seeding will occur in the appropriate season; temporary seeding or mulching may also be required. All areas to be reseeded will be disked or tilled prior to planting and/or seeding.
- Areas of riparian woodland removed for construction will be replaced or enhanced with an equivalent acreage. Habitat replacement or enhancement will consist of planting native trees and shrubs, controlling noxious weeds, or seeding of native species. Habitat enhancement will be accomplished within the study area, ideally along Mill Creek.
- Removal of riparian woodland vegetation will be avoided where possible. Removal of trees in areas of temporary disturbance will be minimized.
- During construction, vehicle operation will be restricted to the designated construction area, which will be fenced or clearly flagged. Construction limits will be fenced with silt-type fencing where adjacent to sensitive habitats, such as riparian woodland or wetland habitats.
- Noxious weeds will be controlled during construction and operation in compliance with State and County requirements and UDOT policy.
- Best Management Practices will be used during all phases of construction to reduce impacts from sedimentation and erosion, including the use of berms, erosion control blankets, sandbag barriers, mulch and mulch tackifier, silt fences, and/or straw-bale barriers.

5.12.1 Mill Creek Bridge

The following mitigation measures will be implemented during the design and construction of the bridge to minimize impacts to wildlife:

- The bridge will be designed so that wildlife are provided adequate crossing space on each side of Mill Creek and shrubs and grasses would be planted at the entrances and underneath the bridge, as appropriate, to provide small animals cover when entering or passing through the bridge.
- Bridge lighting will be placed so that birds will not become trapped in the beam.

5.12.2 Migratory Birds

The following mitigation measures will be implemented to minimize impacts to migratory birds:

- Tree and shrub removal will occur during the non-nesting season (August 1 to April 1).
- Removal of or construction on the existing bridge will be avoided between May 15 and July 31 as to not disturb swallow nests and young. If construction must occur during this period, existing nests must be removed prior to April 1 and:
    - A non-toxic sticky gel (provided by Bird-X) will be applied to prevent birds from nesting (remove gel residue upon completion of construction), or;
    - A plastic tarp will be suspended over areas used for nesting to deter swallows from nesting under bridges during construction, or;
    - A polyethylene netting of appropriate size to prevent swallows from accessing the nest sites will be installed; remove after construction is completed.

5.12.3 Nesting Raptors

Raptors respond differently to disturbance based on species, individual tolerance, nesting cycle, topography, and vegetative cover, as well as the type, frequency, and duration of disturbance (U.S. Fish and Wildlife Service, 2002). To minimize adverse impacts to nesting raptors in the study area:

- Raptor nest surveys will be conducted prior to construction activity if the construction activity would occur during the breeding/nesting season (April 1 to August 1). Surveys should consist of two observations. The first survey would occur in the beginning of the nesting season, before trees leaf out (between March 15 and April 15, depending on seasonal variations), to identify locations of existing or active raptor nests within or near the construction area. The second survey would be conducted after nesting has begun (generally May 15 to June 1) to determine which nests are actively used and by which species.

- If an active nest is found, the U.S. Fish and Wildlife Service (USFWS) and/or UDWR biologists will be consulted to determine specific no-work buffer distances and durations based on species and site characteristics.

5.13 Threatened and Endangered Species

The USFWS has been consulted to confirm mitigation requirements and has responded with a concurrence of Not Likely to Adversely Affect. Please see **Appendix C** for concurrence letter.

In order to avoid and minimize impacts to special status species, the following mitigation measures will be implemented:

5.13.1 Southwestern Willow Flycatcher and Western Yellow-Billed Cuckoo

- No vegetation will be cleared along Mill Creek between April 1 and October 31 unless presence/absence surveys are conducted for the southwestern willow flycatcher and western yellow-billed cuckoo.
- Areas of riparian and wetland habitat removed for construction will be replaced or enhanced at an equivalent acreage to compensate for the effects of habitat loss. Habitat replacement or enhancement would consist of planting of native trees and shrubs, controlling noxious weeds, or seeding native species in the vicinity of the project. Habitat enhancement would be accomplished within the study area, ideally along Mill Creek.

5.13.2 Arizona Toad, Western Banded Gecko, Western Threadsnake, and Desert Springsnail

- During construction, vehicle operation will be restricted to the designated construction area, which will be fenced or clearly flagged. Construction limits will be fenced with silt-type fencing where adjacent to sensitive habitats such as riparian woodland or wetland habitats.
- If any toads are observed during construction, they will be removed (by hand) and placed along the Mill Creek corridor outside the work area.

5.13.3 Desert Sucker

- Best Management Practices (BMPs) will be used during all phases of construction to reduce impacts from sedimentation and erosion, including the use of berms, brush barriers, check dams, erosion control blankets, filter strips, sandbag barriers, sediment basins, silt fences, straw-bale barriers, surface roughening, and/or diversion channels.
- See other mitigation measures listed in Section 3.12.4 Wetland Mitigation.

5.14 Invasive Species

In order to minimize the spread of noxious weeds in the work area, the following mitigation measures will be implemented:

- All noxious weeds will be verified and located in the work area. If assistance is needed for identification, the County weed control supervisor or UDOT's region landscape architect will be contacted.
- All existing noxious weed populations will be treated 10 days before starting earthwork operations
- Noxious weed populations identified before and during construction will be controlled using pre-emergent, selective, and non-selective herbicides, as listed in UDOT Special Provision Section 02924S Invasive Weed Control.
- High-pressure water blasting or steam-cleaning methods will be used to clean all earthmoving construction equipment (scrapers, bulldozers, excavators, backhoes, trenchers) of dirt, mud, and seed residue before initially entering the project area.
- If borrow material is used for any part of the proposed project, the Contractor will certify that the material is free of noxious weeds. If the borrow is stockpiled, it will be stabilized and remain weed-free for the duration.

Staging areas will not be allowed in weed-infested areas unless the staging area is pre-treated using integrated management.

5.15 Historical and Archeological Resources

Mitigation measures for the impacts of the proposed Build alternatives have been determined in consultation with SHPO, Utah Heritage Foundation, Washington City, and other interested parties. The mitigation measures are detailed in a Memorandum of Agreement (MOA) that is signed by the FHWA, SHPO, UDOT, and Washington City. Mitigation measures will include;

- Preparing an Intensive Level Survey (ILS) for the Mill Creek Bridge,
- Photographing the Mill Creek Bridge to document the general arrangement and exterior details,
- Preparing and submitting one complete set of engineering drawings (as-built), if available. Submitting a copy of the proposed roadway and bridge cross sections,
- Designing the bridge aesthetics to be consistent with the historic theme fo the surrounding area,
- FHWA/UDOT continuing consultation with SHPO and Washington City concerning bridge aesthetics

- Inviting SHPO and Washington City to participate in preliminary aesthetic design discussions and reviews for the replacement bridge,
- Submitting all materials to the Utah Division of State History, Preservation Section, to be placed on file.

The MOA is signed by all parties involved in the consultation process. A copy of the MOA is included in **Appendix D**.

Context Sensitive Solutions will be used in designing the new bridge over Mill Creek. UDOT and FHWA are sensitive to the issues involved with the construction of a new bridge to replace the historic Mill Creek Bridge.

During construction, if any previously unknown cultural resources are encountered, construction will cease, and materials will be evaluated in accordance with UDOT Standard Specification 01355, Part 1.13, Discovery of Historical, Archaeological, or Paleontological Objects, Features, Sites, Human Remains, or Migratory Avian Species.

5.16 Hazardous Waste

Before any construction begins, an accurate location for all of the USTs and LUSTs along Telegraph Street would be attained. By doing this, it will be clear whether or not special precautions need to be taken when building near any of these underground tanks.

If petroleum contamination is encountered during construction, mitigation will be in accordance with UDOT Standard Specification 01355, Environmental Protection, which directs the contractor to stop work and notify the project engineer of the discovery. Disposition of the hazardous material would take place under guidelines set by the UDEQ.

5.17 Visual Quality

Principles of Context Sensitive Solutions have been examined to determine if special design considerations need to be evaluated to avoid visual impacts. Since Washington City desires the Historic Downtown area to be a pedestrian-oriented area, park strips with landscaping will be added between the sidewalk and the new widened road. This will reduce pedestrians' feeling of traveling on a major thoroughfare and will provide an aesthetically pleasing walkway to draw their attention away from traffic.

Other mitigation measures will include:

- Proper maintenance (coordinated by UDOT, Washington City, and the community) to avoid landscapes or structures becoming "eyesores" resulting from neglect
- Preservation of elements of Historic Downtown through context-sensitive design

- Architectural treatment considerations for the bridge and walls (i.e. form liners, stains, cut stone facades, etc.)

5.18 Energy

The following list provides mitigation measures that will be followed to ensure that energy use will not be unreasonable:

- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Idle time will be minimized to 10 minutes or less – saves fuel and reduces emissions.
- Existing power sources will be used where possible.

5.19 Construction

Construction noise impacts will occur, but are considered as temporary and will be minimized by strict adherence to UDOT standard procedures for road construction (UDOT Specification 01355 Part 1.8). Construction work will be suspended if vibration levels exceed UDOT's specifications, and vibration monitoring may be instituted.

Construction signs indicating access points and signs indicating that businesses are still open will be used to reduce construction impacts to businesses along the corridor.

Roadway construction activities will result in temporary and permanent impacts to vegetation. Some vegetation will be removed during cut and fill and other construction activity, but most areas will be revegetated at the end of construction. Less than five acres will be temporarily disturbed. Provisions of UDOT Construction Specification 02924S, Invasive Weed Control, will be followed in order to prevent the introduction of invasive weed species into the job site. Provisions include cleaning equipment before entering the project area, avoiding unnecessary disturbance of areas known to be infested with noxious weeds, and the use of herbicides where appropriate to control weeds.

During construction, impacts to water quality in Mill Creek are anticipated during construction due to sedimentation increases from stream bank disturbance. These disturbed areas may also cause an increase in suspended solids and nutrient loading from exposed areas. Construction activities may also introduce pollutants such as oil and grease from construction equipment. Implementation of temporary and permanent BMP's will help mitigate any impacts to water quality from construction activities. The following actions will be implemented:

- Implementation of a Storm Water Pollution Prevention Plan that reduces sediment production and addresses all State and Federal requirements.

- Revegetation of exposed soil to help minimize the establishment of non-native species to disturbed areas, along with construction of erosion and sediment control features such as fiber mats, catch basins, silt fences and sediment barriers.
- Work in the immediate vicinity of Mill Creek would be limited to periods of low flow to reduce water quality impacts.

Construction activities could result in fugitive dust emissions along the project corridor. The Utah Air Quality Rules require a dust control plan from all sources whose activities or equipment have the potential to produce fugitive dust or airborne dust along the Wasatch Front. Dust control plans will be developed and implemented to minimize fugitive dust on-site from pits, yards, storage areas, and areas of operation and to prevent greater than 10 percent opacity from fugitive dust at the property boundary.